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* APR 07 1998 for U.S. Current Classification data. *
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* APR 07 1998 for U.S. Patent Image Data. *
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* PLEASE USE 305-9000 FOR NEW TELEPHONE NUMBER * *
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* More U.S. patent data is now available on APS. The new *
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* USOCR file contains patents issued in 1970, plus some *
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* Patents News Folder under the Public Folders in e-mail for *
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* more information on using the new file. Thank you. *
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* Help Desk --> 703-305-9000 *
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* The Help Desk is staffed for APS support 7 days/week. *
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* Monday through Friday: 6:30am - 9:00pm *
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* Saturday, Sunday, Holidays: 8:30am - 5:00 pm *
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* The Help Desk staff at this number will handle all APS *
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* related questions. *
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* The APS is available: *
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* 6:30am - 9:00pm Monday through Friday *
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FILE 'USPAT' ENTERED AT 08:04:04 ON 13 APR 1998

\*\*\*\*\*  
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 \*\*\*\*\*

=> s thioredoxin

L1 138 THIOREDOXIN

=> s coli

L2 20750 COLI

=> s l1(p)l2

L3 54 L1(P)L2

=> s express?

L4 270551 EXPRESS?

=> s l3 and l4

L5 45 L3 AND L4

=> s plasmid or plasmids

10341 PLASMID

7747 PLASMIDS

L6 10851 PLASMID OR PLASMIDS

=> s l5 and l6

L7 44 L5 AND L6

=> d 1-44

1. 5,736,139, Apr. 7, 1998, Treatment of Clostridium difficile induced disease; John A. Kink, et al., 424/164.1, 167.1; 530/389.1, 389.5 [IMAGE AVAILABLE]

2. 5,726,044, Mar. 10, 1998, \*\*Expression\*\* and export technology of proteins as immunofusins; Kin-Ming Lo, et al., 435/69.7, 69.8, 70.1, 320.1, 328; 536/23.53 [IMAGE AVAILABLE]

3. 5,716,819, Feb. 10, 1998, Cloning and \*\*expression\*\* of T5 DNA polymerase reduced in 3'-to-5' exonuclease activity; Deb K. Chatterjee, 435/194, 196, 252.3, 254.11, 320.1, 325; 536/23.2, 24.1 [IMAGE AVAILABLE]

4. 5,700,678, Dec. 23, 1997, Protein disulfide-isomerase and production thereof; Kumao Toyoshima, et al., 435/233, 69.1, 91.4, 172.3, 252.33, 254.21, 320.1, 325; 536/23.2, 23.5 [IMAGE AVAILABLE]

5. 5,698,403, Dec. 16, 1997, Methods of detecting platelet-activating factor acetylhydrolase using antibodies; Lawrence S. Cousens, et al., 435/7.4, 7.1 [IMAGE AVAILABLE]

6. 5,686,412, Nov. 11, 1997, Protein kinases; Merl F. Hoekstra, 514/12; 424/94.5; 435/15, 194; 514/2 [IMAGE AVAILABLE]

7. 5,665,566, Sep. 9, 1997, Cloning of enterokinase and method of use; Edward R. LaVallie, 435/69.3; 424/94.63; 435/69.1, 252.3, 320.1; 536/23.2, 27.1 [IMAGE AVAILABLE]

8. 5,658,882, Aug. 19, 1997, Methods of inducing formation of tendon and/or ligament tissue comprising administering BMP-12, BMP-13, and/or MP-52; Anthony J. Celeste, et al., 514/12; 435/69.1, 252.3, 320.1, 375; 514/2, 8; 530/350, 399; 536/23.4, 23.5 [IMAGE AVAILABLE]

9. 5,656,431, Aug. 12, 1997, Platelet-activating factor acetylhydrolase; Lawrence S. Cousens, et al., 435/6, 172.1, 172.3, 197, 198; 536/23.1, 23.2, 23.5, 24.31 [IMAGE AVAILABLE]

10. 5,652,132, Jul. 29, 1997, Oxido reductase enzyme system obtainable from P. chrysogenum, the set of genes encoding the same and the use of oxido reductase enzyme systems or genes encoding the same for increasing

- antibiotic production; Yair Aharonowitz, et al., 435/6, 172.3, 191, 252.3, 252.33, 252.35, 254.11, 325; 536/23.2 [IMAGE AVAILABLE]
11. 5,646,016, Jul. 8, 1997, Peptide and protein fusions to thioredoxin, thioredoxin-like molecules, and modified thioredoxin-like molecules; John McCoy, et al., 435/69.7, 172.3, 252.3, 254.11, 320.1, 325; 530/350, 413; 536/23.4 [IMAGE AVAILABLE]
12. 5,641,669, Jun. 24, 1997, Platelet-activating factor acetylhydrolase; Lawrence S. Cousens, et al., 435/195, 7.1, 7.2, 7.9; 514/2; 530/300, 388.1 [IMAGE AVAILABLE]
13. 5,639,635, Jun. 17, 1997, Process for bacterial production of polypeptides; John C. Joly, et al., 435/69.1; 536/23.5, 23.6, 23.7 [IMAGE AVAILABLE]
14. 5,639,608, Jun. 17, 1997, Method for sequencing DNA using a T7-type DNA polymerase and short oligonucleotide primers; Stanley Tabor, et al., 435/6, 91.2; 935/77 [IMAGE AVAILABLE]
15. 5,635,182, Jun. 3, 1997, Method of detecting ligand interactions; John M. McCoy, et al., 424/191.1, 93.2; 435/69.7, 172.3, 252.3, 252.31, 252.33, 254.11; 530/327, 330, 350; 536/23.1, 23.4; 935/79, 80 [IMAGE AVAILABLE]
16. 5,629,172, May 13, 1997, **\*\*Expression\*\*** of fusion polypeptides transported out of the cytoplasm without leader sequences; Desmond Mascarenhas, et al., 435/69.7, 69.1, 252.3, 320.1; 530/350; 536/23.4 [IMAGE AVAILABLE]
17. 5,605,801, Feb. 25, 1997, Methods of detecting lesions in the platelet-activating factor acetylhydrolase gene; Lawrence S. Cousens, et al., 435/6 [IMAGE AVAILABLE]
18. 5,591,618, Jan. 7, 1997, G protein-coupled receptor kinase GRK6; David Chantry, et al., 435/194, 6, 252.3, 320.1; 536/22.1, 23.1, 23.2, 23.5 [IMAGE AVAILABLE]
19. 5,589,582, Dec. 31, 1996, Polynucleotides encoding porcine cytokines; Robert J. Hawley, et al., 536/23.5; 435/91.1, 252.3, 320.1; 530/351; 536/23.51 [IMAGE AVAILABLE]
20. 5,578,466, Nov. 26, 1996, Recombinant co-**\*\*expression\*\*** system of protein disulfide isomerase gene, yeast receptor protein ERD2 gene and a foreign product polypeptide gene, and a process for producing the foreign polypeptide using such system; Toshiya Hayano, et al., 435/69.7, 69.1, 69.6, 254.2 [IMAGE AVAILABLE]
21. 5,563,046, Oct. 8, 1996, Fusion polypeptides and proteins; Desmond Mascarenhas, et al., 435/69.52, 69.4, 69.7, 252.3, 320.1; 530/350, 351, 399; 536/23.4 [IMAGE AVAILABLE]
22. 5,541,099, Jul. 30, 1996, Cloning and **\*\*expression\*\*** of T5 DNA polymerase reduced in 3'-to-5' exonuclease activity; Deb K. Chatterjee, 435/194, 172.3, 193 [IMAGE AVAILABLE]
23. 5,541,087, Jul. 30, 1996, **\*\*Expression\*\*** and export technology of proteins as immunofusins; Kin-Ming Lo, et al., 435/69.7, 69.8, 70.1, 252.3, 320.1, 355, 369; 530/344, 345, 387.3, 391.1, 391.7, 402; 536/23.1, 23.4, 23.53 [IMAGE AVAILABLE]
24. 5,534,407, Jul. 9, 1996, Method for nucleic acid hybridization using single-stranded DNA binding protein; Stanley Tabor, et al., 435/5, 6; 935/77, 78 [IMAGE AVAILABLE]
25. 5,532,151, Jul. 2, 1996, G protein-coupled receptor kinase GRK6; David Chantry, et al., 435/194, 6, 252.3, 320.1; 536/22.1, 23.1, 23.2, 23.5 [IMAGE AVAILABLE]

26. 5,460,810, Oct. 24, 1995, Method for maintaining gut epithelial cells by treatment with a cytokine such as interleukin 11; David A. Williams, et al., 424/85.1, 85.2; 514/867, 908 [IMAGE AVAILABLE]
27. 5,437,863, Aug. 1, 1995, Method of enhancing the growth of gut epithelial cells by administration of a cytokine such as interleukin II; David A. Williams, et al., 424/85.1, 85.2 [IMAGE AVAILABLE]
28. 5,434,079, Jul. 18, 1995, Apparatus and process for continuous in vitro synthesis of proteins; Bobak R. Mozayeni, 435/286.5; 210/321.75; 435/297.2; 935/88 [IMAGE AVAILABLE]
29. 5,382,660, Jan. 17, 1995, TcpG gene of vibrio cholerae; Ronald K. Taylor, et al., 536/23.2, 23.1, 23.7 [IMAGE AVAILABLE]
30. 5,328,839, Jul. 12, 1994, Oxido reductase enzyme system obtained from *P. chrysogenum*; Yair Aharonowitz, et al., 435/191, 189, 935 [IMAGE AVAILABLE]
31. 5,292,646, Mar. 8, 1994, Peptide and protein fusions to thioredoxin and thioredoxin-like molecules; John McCoy, et al., 435/69.7, 243, 252.3, 252.33, 254.11, 254.2, 320.1; 530/350; 536/23.4; 935/44, 47 [IMAGE AVAILABLE]
32. 5,270,181, Dec. 14, 1993, Peptide and protein fusions to thioredoxin and thioredoxin-like molecules; John McCoy, et al., 435/69.7, 243, 252.3, 252.33, 254.11, 320.1; 536/23.4; 935/10, 27, 66, 69, 72, 73 [IMAGE AVAILABLE]
33. 5,270,179, Dec. 14, 1993, Cloning and **\*\*expression\*\*** of T5 DNA polymerase reduced in 3'- to-5' exonuclease activity; Deb K. Chatterjee, 435/69.1, 69.7, 69.8, 172.3, 191, 193, 194, 252.3, 252.33, 320.1; 536/23.1, 23.2, 23.4, 23.72, 24.1, 24.2; 935/6, 14, 38, 72 [IMAGE AVAILABLE]
34. 5,266,466, Nov. 30, 1993, Method of using T7 DNA polymerase to label the 3' end of a DNA molecule; Stanley Tabor, et al., 435/91.5, 6, 172.1, 194; 935/17, 77 [IMAGE AVAILABLE]
35. 5,210,073, May 11, 1993, Method for treating cancer therapy radiation damage or arteriosclerosis using human ADF; Junji Yodoi, et al., 514/12, 2, 21, 824, 886, 917 [IMAGE AVAILABLE]
36. 5,187,098, Feb. 16, 1993, DNA encoding hybrid streptokinases with plasminogen fibrin binding domains; Horst Malke, et al., 435/320.1, 216, 217, 226; 536/23.2, 23.4 [IMAGE AVAILABLE]
37. 5,173,411, Dec. 22, 1992, Method for determining the nucleotide base sequence of a DNA molecule; Stanley Tabor, et al., 435/6, 91.2, 172.3; 436/501; 935/78 [IMAGE AVAILABLE]
38. 5,145,776, Sep. 8, 1992, Method of using T7 DNA polymerase to mutagenize and fill-in DNA; Stanley Tabor, et al., 435/91.5, 6, 172.1, 194; 935/17, 77 [IMAGE AVAILABLE]
39. 5,047,342, Sep. 10, 1991, Cloning and **\*\*expression\*\*** of T5 DNA polymerase; Deb K. Chatterjee, 435/194, 172.3, 239, 252.3, 252.33, 320.1; 530/826; 536/23.2 [IMAGE AVAILABLE]
40. 4,994,372, Feb. 19, 1991, DNA sequencing; Stanley Tabor, et al., 435/6, 91.2, 91.5, 91.51, 803; 436/501; 935/77, 78 [IMAGE AVAILABLE]
41. 4,946,786, Aug. 7, 1990, T7 DNA polymerase; Stanley Tabor, et al., 435/194, 172.3, 252.33, 320.1; 935/14, 29, 73 [IMAGE AVAILABLE]
42. 4,942,130, Jul. 17, 1990, T7 DNA polymerase; Stanley Tabor, et al., 435/194, 172.1, 172.3, 849; 536/23.2; 935/14, 29, 73 [IMAGE AVAILABLE]

43. 4,921,794, May 1, 1990, T7 DNA polymerase; Stanley Tabor, et al., 435/91.2, 172.3, 194, 320.1; 536/23.1, 24.33; 935/16, 17, 18 [IMAGE AVAILABLE]

44. 4,795,699, Jan. 3, 1989, T7 DNA polymerase; Stanley Tabor, et al., 435/5, 6, 172.3, 803, 810; 935/77, 78 [IMAGE AVAILABLE]

=> d 13 ab

US PAT NO: 5,639,635 [IMAGE AVAILABLE] L7: 13 of 44

#### ABSTRACT:

A process is provided for producing a heterologous polypeptide in bacteria, which process comprises:

- (a) culturing bacterial cells, which cells comprise nucleic acid encoding a DsbA or DsbC protein, nucleic acid encoding the heterologous polypeptide, a signal sequence for secretion of both the DsbA or DsbC protein and the heterologous polypeptide, and an inducible promoter for both the nucleic acid encoding the DsbA or DsbC protein and the nucleic acid encoding the heterologous polypeptide, under conditions whereby **\*\*expression\*\*** of the nucleic acid encoding the DsbA or DsbC protein is induced prior to induction of the **\*\*expression\*\*** of the nucleic acid encoding the heterologous polypeptide, and under conditions whereby either both the heterologous polypeptide and the DsbA or DsbC protein are secreted into the periplasm of the bacteria or the heterologous polypeptide is secreted into the medium in which the bacterial cells are cultured; and
- (b) recovering the heterologous polypeptide from the periplasm or the culture medium.

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L1 138 S THIOREDOXIN  
 L2 20750 S COLI  
 L3 54 S L1(P)L2  
 L4 270551 S EXPRESS?  
 L5 45 S L3 AND L4  
 L6 10851 S PLASMID OR PLASMIDS  
 L7 44 S L5 AND L6

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| E31 | 12    | AU=ISHII, SHINYA     |
| E32 | 20    | AU=ISHII, SHINZO     |
| E33 | 26    | AU=ISHII, SHIRO      |
| E34 | 1     | AU=ISHII, SHIZUKA    |
| E35 | 2     | AU=ISHII, SHIZUKO    |
| E36 | 2     | AU=ISHII, SHO        |

Enter P or PAGE for more

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| Ref | Items | Index-term         |
|-----|-------|--------------------|
| E37 | 6     | AU=ISHII, SHOEI    |
| E38 | 2     | AU=ISHII, SHOGO    |
| E39 | 1     | AU=ISHII, SHOHJI   |
| E40 | 21    | AU=ISHII, SHOICHI  |
| E41 | 25    | AU=ISHII, SHOJI    |
| E42 | 8     | AU=ISHII, SHOJIRO  |
| E43 | 1     | AU=ISHII, SHOKO    |
| E44 | 1     | AU=ISHII, SHOSUKE  |
| E45 | 4     | AU=ISHII, SHOUGO   |
| E46 | 1     | AU=ISHII, SHOUICHI |
| E47 | 1     | AU=ISHII, SHOUZO   |
| E48 | 13    | AU=ISHII, SHOWA    |

Enter P or PAGE for more

? e au=ishii, shun

| Ref | Items | Index-term                |
|-----|-------|---------------------------|
| E1  | 4     | AU=ISHII, SHUJI           |
| E2  | 5     | AU=ISHII, SHUKICHI        |
| E3  | 0     | *AU=ISHII, SHUN           |
| E4  | 19    | AU=ISHII, SHUNICHIRO      |
| E5  | 7     | AU=ISHII, SHUNJI          |
| E6  | 131   | AU=ISHII, SHUNSUKE        |
| E7  | 1     | AU=ISHII, SHUNSUKE, ISHII |
| E8  | 2     | AU=ISHII, SHUSAKU         |
| E9  | 1     | AU=ISHII, SHUTA           |
| E10 | 1     | AU=ISHII, SINICHI         |
| E11 | 1     | AU=ISHII, SINNOSUKE       |
| E12 | 4     | AU=ISHII, SOKO            |

Enter P or PAGE for more

? s e2 or e6 or e7

|    |     |   |
|----|-----|---|
|    | 5   | AU=ISHII, SHUKICHI  |
|    | 131 | AU=ISHII, SHUNSUKE  |
|    | 1   | AU=ISHII, SHUNSUKE, ISHII   |
| S3 | 137 | AU="ISHII, SHUKICHI" OR AU="ISHII, SHUNSUKE" OR AU="ISHII, SHUNSUKE, ISHII" |

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| Set | Items | Description  |
|-----|-------|--|
| S1  | 1407  | AU="ISHII S"   |
| S2  | 255   | AU="ISHII, S" OR AU="ISHII, S."                            |
| S3  | 137   | AU="ISHII, SHUKICHI" OR AU="ISHII, SHUNSUKE" OR AU="ISHII, |

SHUNSUKE, ISHII"

? e au=ishii s

| Ref | Items | Index-term   |
|-----|-------|--------------|
| E1  | 34    | AU=ISHII O   |
| E2  | 230   | AU=ISHII R   |
| E3  | 1407  | *AU=ISHII S  |
| E4  | 2     | AU=ISHII S I |
| E5  | 71    | AU=ISHII S-I |
| E6  | 2097  | AU=ISHII T   |
| E7  | 7     | AU=ISHII T K |
| E8  | 3     | AU=ISHII T M |
| E9  | 4     | AU=ISHII TK  |
| E10 | 2     | AU=ISHII TM  |
| E11 | 1     | AU=ISHII U   |
| E12 | 1     | AU=ISHII V   |

Enter P or PAGE for more

? s e4 or e5

|    |    |                                  |
|----|----|----------------------------------|
|    | 2  | AU=ISHII S I                     |
|    | 71 | AU=ISHII S-I                     |
| S4 | 73 | AU="ISHII S I" OR AU="ISHII S-I" |

? e au=ishii, s

| Ref | Items | Index-term          |
|-----|-------|---------------------|
| E1  | 11    | AU=ISHII, RYUJI     |
| E2  | 4     | AU=ISHII, RYUTARO   |
| E3  | 2     | *AU=ISHII, S        |
| E4  | 253   | AU=ISHII, S.        |
| E5  | 2     | AU=ISHII, S. I.     |
| E6  | 1     | AU=ISHII, S.-I.     |
| E7  | 11    | AU=ISHII, SABURO    |
| E8  | 1     | AU=ISHII, SACHIHIRO |
| E9  | 5     | AU=ISHII, SACHIKO   |
| E10 | 1     | AU=ISHII, SACHIOMI  |
| E11 | 1     | AU=ISHII, SADAJI    |
| E12 | 1     | AU=ISHII, SADAKO    |

Enter P or PAGE for more

? s e5 or e6

|    |   |  |
|----|---|--|
|    | 2 | AU=ISHII, S. I.                        |
|    | 1 | AU=ISHII, S.-I.                        |
| S5 | 3 | AU="ISHII, S. I." OR AU="ISHII, S.-I." |

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| Set | Items | Description   |
|-----|-------|---|
| S1  | 1407  | AU="ISHII S"  |
| S2  | 255   | AU="ISHII, S" OR AU="ISHII, S."   |
| S3  | 137   | AU="ISHII, SHUKICHI" OR AU="ISHII, SHUNSUKE" OR AU="ISHII, SHUNSUKE, ISHII" |
| S4  | 73    | AU="ISHII S I" OR AU="ISHII S-I"  |
| S5  | 3     | AU="ISHII, S. I." OR AU="ISHII, S.-I."                                      |

? s s1:s5

|    |      |       |
|----|------|-------|
| S6 | 1874 | S1:S5 |
|----|------|-------|

? s thioredoxin

|    |      |             |
|----|------|-------------|
| S7 | 4055 | THIOREDOXIN |
|----|------|-------------|

? s s6 and s7

|    |      |           |
|----|------|-----------|
|    | 1874 | S6        |
|    | 4055 | S7        |
| S8 | 5    | S6 AND S7 |

? d s8/7/1-5

Display 8/7/1 (Item 1 from file: 55)  
 DIALOG(R)File 55:BIOSIS PREVIEWS(R)  
 (c) 1998 BIOSIS. All rts. reserv.

11968767 BIOSIS Number: 98568767  
 Increase of Solubility of Foreign Proteins in Escherichia coli by  
 Coproduction of the Bacterial %%%Thioredoxin%% %  
 Yasukawa T; Kanei-Ishii C; Maekawa T; Fujimoto J; Yamamoto T; %%%Ishii%% %  
 %%%S%% %  
 Lab. Mol. Genet., Inst. Phys. Chem. Res., 3-1-1 Koyadai, Tsukuba, Ibaraki  
 305, Japan  
 Journal of Biological Chemistry 270 (43). 1995. 25328-25331.  
 Full Journal Title: Journal of Biological Chemistry  
 ISSN: 0021-9258  
 Language: ENGLISH  
 Print Number: Biological Abstracts Vol. 101 Iss. 001 Ref. 011572  
 Eukaryotic proteins are frequently produced in Escherichia coli as  
 insoluble aggregates. This is one of the barriers to studies of  
 macromolecular structure. We have examined the effect of coproduction of  
 the E. coli %%%thioredoxin%% (Trx) or E. coli chaperones GroESL on the

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Display 8/7/1 (Item 1 from file: 55)  
 DIALOG(R)File 55:BIOSIS PREVIEWS(R)  
 (c) 1998 BIOSIS. All rts. reserv.  
 solubility of various foreign proteins. The solubilities of all eight  
 vertebrate proteins examined including transcription factors and kinases  
 were increased dramatically by coproduction of Trx. Overproduction of E.  
 coli chaperones GroESL increased the solubilities of four out of eight  
 proteins examined. Although the tyrosine kinase Lck that was produced as an  
 insoluble form and solubilized by urea treatment had a very low  
 autophosphorylating activity, Lck produced in soluble form by coproduction  
 of Trx had an efficient activity. These results suggest that the proteins  
 produced in soluble form by coproduction of Trx have the native protein  
 conformation. The mechanism by which coproduction of Trx increases the  
 solubility of the foreign proteins is discussed.

- end of record -

?

Display 8/7/2 (Item 1 from file: 154)  
 DIALOG(R)File 154:MEDLINE(R)  
 (c) format only 1998 Dialog Corporation. All rts. reserv.

08457795 96029605  
 Increase of solubility of foreign proteins in Escherichia coli by  
 coproduction of the bacterial %%%thioredoxin%% %  
 Yasukawa T; Kanei-Ishii C; Maekawa T; Fujimoto J; Yamamoto T; %%%Ishii%% %  
 %%%S%% %  
 Laboratory of Molecular Genetics, Institute of Physical and Chemical  
 Research (RIKEN), Ibaraki, Japan.  
 J Biol Chem (UNITED STATES) Oct 27 1995, 270 (43) p25328-31, ISSN  
 0021-9258 Journal Code: HIV  
 Languages: ENGLISH  
 Document type: JOURNAL ARTICLE  
 Eukaryotic proteins are frequently produced in Escherichia coli as  
 insoluble aggregates. This is one of the barriers to studies of  
 macromolecular structure. We have examined the effect of coproduction of  
 the E. coli %%%thioredoxin%% (Trx) or E. coli chaperones GroESL on the  
 solubility of various foreign proteins. The solubilities of all eight

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Display 8/7/2 (Item 1 from file: 154)  
 DIALOG(R)File 154:MEDLINE(R)  
 (c) format only 1998 Dialog Corporation. All rts. reserv.  
 vertebrate proteins examined including transcription factors and kinases  
 were increased dramatically by coproduction of Trx. Overproduction of E.  
 coli chaperones GroESL increased the solubilities of four out of eight  
 proteins examined. Although the tyrosine kinase Lck that was produced as an  
 insoluble form and solubilized by urea treatment had a very low  
 autophosphorylating activity, Lck produced in soluble form by coproduction  
 of Trx had an efficient activity. These results suggest that the proteins  
 produced in soluble form by coproduction of Trx have the native protein  
 conformation. The mechanism by which coproduction of Trx increases the  
 solubility of the foreign proteins is discussed.

- end of record -

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Display 8/7/3 (Item 1 from file: 351)  
 DIALOG(R)File 351:DERWENT WPI  
 (c)1998 Derwent Info Ltd. All rts. reserv.

011236915 \*\*Image available\*\*  
 WPI Acc No: 97-214818/199720  
 Bacterium producing eukaryotic proteins in soluble form - by expression  
 of protein-encoding and % % %thioredoxin % % % genes  
 Patent Assignee: HSP RES INST INC (HSPR-N); INST PHYSICAL & CHEM RES (RIKA  
 ); HSP KENKYUSHO KK (HSPK-N); RIKAGAKU KENKYUSHO (RIKA )  
 Inventor: % % %ISHII S % % %; YURA T  
 Number of Countries: 008 Number of Patents: 003  
 Patent Family:  

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Main IPC | Week     |
|------------|------|----------|-------------|------|----------|----------|----------|
| EP 768382  | A2   | 19970416 | EP 96116359 | A    | 19961011 |          | 199720 B |
| JP 9107954 | A    | 19970428 | JP 95291859 | A    | 19951013 |          | 199727   |
| CA 2187250 | A    | 19970414 | CA 2187250  | A    | 19961007 |          | 199733   |

  
 Priority Applications (No Type Date): JP 95291859 A 19951013  
 Cited Patents: No-SR.Pub

-more-

? d s8/7/4-5

Display 8/7/4 (Item 1 from file: 399)  
 DIALOG(R)File 399:CA SEARCH(R)  
 (c) 1998 American Chemical Society. All rts. reserv.

126273257 CA: 126(21)273257f PATENT  
 Method for producing a soluble protein with bacteria by co-expressing a  
 thioredoxin  
 INVENTOR(AUTHOR): Ishii, Shunsuke; Yura, Takashi  
 LOCATION: Japan,  
 ASSIGNEE: Hsp Research Institute, Inc.; Institute of Physical and  
 Chemical Research  
 PATENT: European Pat. Appl. ; EP 768382 A2 DATE: 19970416  
 APPLICATION: EP 96116359 (19961011) \*JP 95291859 (19951013)  
 PAGES: 15 pp. CODEN: EPXXDW LANGUAGE: English CLASS: C12N-015/53A;  
 C12N-001/21B; C07K-014/82 DESIGNATED COUNTRIES: CH; DE; FR; GB; IT; LI  
 SECTION:  
 CA203002 Biochemical Genetics  
 IDENTIFIERS: bacteria recombinant sol protein manuf thioredoxin,  
 Escherichia recombinant protein manuf thioredoxin  
 DESCRIPTORS:

-more-

? d s8/7/5

Display 8/7/5 (Item 2 from file: 399)  
 DIALOG(R)File 399:CA SEARCH(R)  
 (c) 1998 American Chemical Society. All rts. reserv.

1070  
1809

123310190 CA: 123(23)310190q JOURNAL  
 Increase of solubility of foreign proteins in Escherichia coli by  
 coproduction of the bacterial thioredoxin  
 AUTHOR(S): Yasukawa, Takashi; Kanei-Ishii, Chie; Maekawa, Toshio;  
 Fujimoto, Jiro; Yamamoto, Tadashi; Ishii, Shunsuke  
 LOCATION: Lab. Mol. Genet., Inst. Phys. Chem. Res., Tsukuba, Japan, 305  
 JOURNAL: J. Biol. Chem. DATE: 1995 VOLUME: 270 NUMBER: 43 PAGES:  
 25328-31 CODEN: JBCHA3 ISSN: 0021-9258 LANGUAGE: English  
 SECTION:  
 CA210006 MICROBIAL, ALGAL, AND FUNGAL BIOCHEMISTRY  
 IDENTIFIERS: thioredoxin Escherichia protein soly  
 DESCRIPTORS:  
 Proteins, biological studies...  
 GroE; increase in soly. of foreign proteins in Escherichia coli by  
 coprodn. of chaperones  
 Proteins, biological studies...

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| Set | Items | Description   |
|-----|-------|---|
| S1  | 1407  | AU="ISHII S"  |
| S2  | 255   | AU="ISHII, S" OR AU="ISHII, S."   |
| S3  | 137   | AU="ISHII, SHUKICHI" OR AU="ISHII, SHUNSUKE" OR AU="ISHII, SHUNSUKE, ISHII" |
| S4  | 73    | AU="ISHII S I" OR AU="ISHII S-I"  |
| S5  | 3     | AU="ISHII, S. I." OR AU="ISHII, S.-I."                                      |
| S6  | 1874  | S1:S5   |
| S7  | 4055  | THIOREDOXIN   |
| S8  | 5     | S6 AND S7   |

? s coli

S9 348118 COLI  
 ? s s7 and s9

4055 S7  
 348118 S9  
 S10 1439 S7 AND S9  
 ? s plasmid

S11 126226 PLASMID  
 ? s s10 and s11

1439 S10  
 126226 S11  
 S12 81 S10 AND S11  
 ? s transform?

S13 546294 TRANSFORM?  
 ? s s12 and s13

81 S12  
 546294 S13  
 S14 27 S12 AND S13  
 ? rd

> > Duplicate detection is not supported for File 351.

> > Records from unsupported files will be retained in the RD set.

...completed examining records

S15 19 RD (unique items)  
 ? d s15/3/1-19

Display 15/3/1 (Item 1 from file: 55)  
 DIALOG(R)File 55:BIOSIS PREVIEWS(R)  
 (c) 1998 BIOSIS. All rts. reserv.

13821369 BIOSIS Number: 99821369

Bacterial and mammalian DNA alkyltransferases sensitize Escherichia coli to the lethal and mutagenic effects of dibromoalkanes  
Abril N; Luque-Romero F L; Prieto-Alamo M-J; Rafferty J A; Marigison G P; Pueyo C

Dep. de Bioquímica y Biología Molecular, Universidad de Córdoba,  
14071-Córdoba, Spain

Carcinogenesis (Oxford) 18 (10). 1997. 1883-1888.

Full Journal Title: Carcinogenesis (Oxford)

ISSN: 0143-3334

Language: ENGLISH

Print Number: Biological Abstracts Vol. 104 Iss. 012 Ref. 178973

- end of record -

?

Display 15/3/2 (Item 2 from file: 55)

DIALOG(R)File 55:BIOSIS PREVIEWS(R)

(c) 1998 BIOSIS. All rts. reserv.

11765638 BIOSIS Number: 98365638

A procedure for the generation and the purification of Escherichia coli thioredoxins with variable N-terminal sequences

Mora-Garcia S; Hagelin K; Wolosiuk R A

Inst. Investigaciones Bioquim., Antonio Machado 151, 1405 Buenos Aires,  
Argentina

Protein Expression and Purification 6 (3). 1995. 213-219.

Full Journal Title: Protein Expression and Purification

ISSN: 1046-5928

Language: ENGLISH

Print Number: Biological Abstracts Vol. 100 Iss. 004 Ref. 057476

- end of record -

?

Display 15/3/3 (Item 3 from file: 55)

DIALOG(R)File 55:BIOSIS PREVIEWS(R)

(c) 1998 BIOSIS. All rts. reserv.

10004549 BIOSIS Number: 95004549

BIOSYNTHESIS OF ACTIVE SPINACH-CHLOROPLAST THIOREDOXIN F IN TRANSFORMED ESCHERICHIA-COLI

AGUILAR F; BRUNNER B; GARDET-SALVI L; STUTZ E; SCHURMANN P

LAB. DE BIOCHIMIE VEGETALE, UNIVERSITE DE NEUCHÂTEL, CH-2000 NEUCHÂTEL,  
SWITZERLAND.

PLANT MOL BIOL 20 (2). 1992. 301-306. CODEN: PMBID

Full Journal Title: Plant Molecular Biology

Language: ENGLISH

- end of record -

?

Display 15/3/4 (Item 4 from file: 55)

DIALOG(R)File 55:BIOSIS PREVIEWS(R)

(c) 1998 BIOSIS. All rts. reserv.

7711649 BIOSIS Number: 90079649

PURIFICATION AND CHARACTERIZATION OF PLASMID-ENCODED THIOREDOXIN FROM ESCHERICHIA-COLI LE392 TRANSFORMANTS CHO M-H; HAHN T-R

DEP. GENETICS, KYUNG HEE UNIV., SUWON 449-900, KOREA.

KOREAN BIOCHEM J 23 (1). 1990. 5-10. CODEN: KBCJA

Full Journal Title: Korean Biochemical Journal

Language: ENGLISH

- end of record -

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Display 15/3/5 (Item 5 from file: 55)  
 DIALOG(R)File 55:BIOSIS PREVIEWS(R)  
 (c) 1998 BIOSIS. All rts. reserv.

7452911 BIOSIS Number: 89103930  
 CLONING NUCLEOTIDE SEQUENCE AND EXPRESSION OF THE RHODOBACTER-SPHAEROIDES  
 Y % % %THIOREDOXIN% % % GENE  
 PILLE S; CHUAT J-C; BRETON A M; CLEMENT-METRAL J D; GALIBERT F  
 GROUPE DE CONCEPTION MOLECULAIRE, LABORATOIRE DE TECHNOLOGIE ENZYMATIQUE,  
 BP649, 60206 COMPIEGNE CEDEX, FRANCE.  
 J BACTERIOL 172 (3). 1990. 1556-1561. CODEN: JOBAA  
 Full Journal Title: Journal of Bacteriology  
 Language: ENGLISH

- end of record -

?

Display 15/3/6 (Item 6 from file: 55)  
 DIALOG(R)File 55:BIOSIS PREVIEWS(R)  
 (c) 1998 BIOSIS. All rts. reserv.

7058592 BIOSIS Number: 87119113  
 PURIFICATION CHARACTERIZATION AND REVISED AMINO ACID SEQUENCE OF A SECOND  
 % % %THIOREDOXIN% % % FROM CORYNEBACTERIUM-NEPHRIDII  
 MCFARLAN S C; HOGENKAMP H P C; ECCLESTON E D; HOWARD J B; FUCHS J A  
 DEP. BIOCEHM., 4-233 MILLARD HALL, 435 DELAWARE ST., S.E., MINNEAPOLIS,  
 MINN. 55455.  
 EUR J BIOCHEM 179 (2). 1989. 389-398. CODEN: EJBCA  
 Full Journal Title: European Journal of Biochemistry  
 Language: ENGLISH

- end of record -

?

Display 15/3/7 (Item 7 from file: 55)  
 DIALOG(R)File 55:BIOSIS PREVIEWS(R)  
 (c) 1998 BIOSIS. All rts. reserv.

7043083 BIOSIS Number: 87103604  
 INCORPORATION OF FOREIGN GENE WITH TI % % %PLASMID% % % VECTOR SYSTEM II.  
 EXPRESSION OF ESCHERICHIA-% % %COLI% % % % %THIOREDOXIN% % % GENE IN CULTURED  
 TOBACCO CELLS  
 LEE H B; JOO C N; HONG S J; KIM S W; LIM C J; KIM Y M  
 DEP. BIOCHEMISTRY, COLL. NATURAL SCI., KANGWEON NATL. UNIV., CHUNCHEON  
 200-701, KOREA.  
 KOREAN BIOCHEM J 21 (4). 1988. 384-388. CODEN: KBCJA  
 Full Journal Title: Korean Biochemical Journal  
 Language: ENGLISH

- end of record -

?

Display 15/3/8 (Item 8 from file: 55)  
 DIALOG(R)File 55:BIOSIS PREVIEWS(R)  
 (c) 1998 BIOSIS. All rts. reserv.

7042553 BIOSIS Number: 87103074  
 INCORPORATION OF FOREIGN GENE WITH TI % % %PLASMID% % % VECTOR SYSTEM I.  
 INTRODUCTION OF ESCHERICHIA-% % %COLI% % % % %THIOREDOXIN% % % GENE INTO  
 AGROBACTERIUM-TUMEFACIENS  
 LEE H B; JOO C N; HONG S J; KIM S W; LIM C J; KIM Y M  
 DEP. BIOCHEMISTRY, COLL. NATURAL SCIENCES, KANGWEON NATL. UNIV.,  
 CHUNCHEON 200-701, KOREA.  
 KOREAN BIOCHEM J 21 (4). 1988. 378-383. CODEN: KBCJA  
 Full Journal Title: Korean Biochemical Journal  
 Language: ENGLISH

- end of record -



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Display 15/3/9 (Item 9 from file: 55)  
 DIALOG(R)File 55:BIOSIS PREVIEWS(R)  
 (c) 1998 BIOSIS. All rts. reserv.

5985772 BIOSIS Number: 84118337  
 CLONING EXPRESSION AND NUCLEOTIDE SEQUENCE OF A GENE ENCODING A SECOND  
 % % %THIOREDOXIN % % % FROM CORYNEBACTERIUM-NEPHRIDII  
 LIM C-J; FUCHS J A; MCFARLAN S C; HOGENKMAP H P C  
 DEP. BIOCHEM., UNIV. MINNESOTA, ST. PAUL, MINNESOTA 55108.  
 J BIOL CHEM 262 (25). 1987. 12114-12119. CODEN: JBCHA  
 Full Journal Title: Journal of Biological Chemistry  
 Language: ENGLISH

- end of record -

?

Display 15/3/10 (Item 10 from file: 55)  
 DIALOG(R)File 55:BIOSIS PREVIEWS(R)  
 (c) 1998 BIOSIS. All rts. reserv.

5275190 BIOSIS Number: 81042497  
 BACTERIOPHAGE T-7 DNA POLYMERASE CLONING AND HIGH-LEVEL EXPRESSION  
 REUTIMANN H; SJOBERG B-M; HOLMGREN A  
 DEP. PHYSIOLOGICAL CHEMISTRY, KAROLINSKA INST., BOX 60400, S-104 01  
 STOCKHOLM, SWEDEN.  
 PROC NATL ACAD SCI U S A 82 (20). 1985. 6783-6787. CODEN: PNASA  
 Full Journal Title: Proceedings of the National Academy of Sciences of  
 the United States of America  
 Language: ENGLISH

- end of record -

?

Display 15/3/11 (Item 11 from file: 55)  
 DIALOG(R)File 55:BIOSIS PREVIEWS(R)  
 (c) 1998 BIOSIS. All rts. reserv.

4819877 BIOSIS Number: 79062192  
 MUTATIONALLY ALTERED RIBONUCLEOTIDE REDUCTASE FROM ESCHERICHIA- % % %COLI % % %  
 CHARACTERIZATION OF MUTATIONS ISOLATED ON MULTICOPY PLASMIDS  
 PLATZ A; SJOBERG B-M  
 DEPARTMENT MOLECULAR BIOLOGY, SWEDISH UNIVERSITY AGRICULTURAL SCIENCES,  
 S-75124 UPPSALA, SWEDEN.  
 J BACTERIOL 160 (3). 1984. 1010-1016. CODEN: JOBAA  
 Full Journal Title: Journal of Bacteriology  
 Language: ENGLISH

- end of record -

?

Display 15/3/12 (Item 1 from file: 154)  
 DIALOG(R)File 154:MEDLINE(R)  
 (c) format only 1998 Dialog Corporation. All rts. reserv.

07168161 93004482  
 Biosynthesis of active spinach-chloroplast % % %thioredoxin % % % f in  
 % % %transformed % % % E. % % %coli % % %.  
 Aguilar F; Brunner B; Gardet-Salvi L; Stutz E; Schurmann P  
 Laboratoire de Biochimie vegetale, Universite de Neuchatel, Switzerland.  
 Plant Mol Biol (NETHERLANDS) Oct 1992, 20 (2) p301-6, ISSN 0167-4412  
 Journal Code: A60  
 Languages: ENGLISH  
 Document type: JOURNAL ARTICLE

- end of record -

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Display 15/3/13 (Item 1 from file: 351)  
 DIALOG(R)File 351:DERWENT WPI  
 (c)1998 Derwent Info Ltd. All rts. reserv.

009768936

WPI Acc No: 94-048787/199406

Related WPI Acc No: 92-300041; 95-224326

XRAM Acc No: C94-022075

Recombinant prodn. of heterologous proteins - by expression as fusion proteins with a % % %thioredoxin% % % -like protein for high stability and solubility

Patent Assignee: GENETICS INST INC (GEMY )

Inventor: LAVALLIE E R; MCCOY J

Number of Countries: 020 Number of Patents: 003

Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Main IPC    | Week     |
|------------|------|----------|-------------|------|----------|-------------|----------|
| WO 9402502 | A1   | 19940203 | WO 93US6913 | A    | 19930723 | C07H-021/04 | 199406 B |
| US 5292646 | A    | 19940308 | US 91652531 | A    | 19910206 | C12N-001/00 | 199410   |
|            |      |          | US 91745382 | A    | 19910814 |             |          |
|            |      |          | US 92921848 | A    | 19920728 |             |          |

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Display 15/3/13 (Item 1 from file: 351)

DIALOG(R)File 351:DERWENT WPI

(c)1998 Derwent Info Ltd. All rts. reserv.

|            |   |          |             |   |          |        |
|------------|---|----------|-------------|---|----------|--------|
| AU 9347814 | A | 19940214 | AU 9347814  | A | 19930723 | 199425 |
|            |   |          | WO 93US6913 | A | 19930723 |        |

Priority Applications (No Type Date): US 92921848 A 19920728; US 91652531 A 19910206; US 91745382 A 19910814

Filing Details:

| Patent     | Kind | Filing Notes | Application | Patent |
|------------|------|--------------|-------------|--------|
| WO 9402502 | A1   |              |             |        |

Designated States (National): AU CA JP

Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LU MC NL

PT SE

US 5292646 A CIP of US 91652531

CIP of US 91745382

AU 9347814 A Based on WO 9402502

Language, Pages: WO 9402502 (E, 53); US 5292646 (38)

- end of record -

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Display 15/3/14 (Item 2 from file: 351)

DIALOG(R)File 351:DERWENT WPI

(c)1998 Derwent Info Ltd. All rts. reserv.

009172607

WPI Acc No: 92-300041/199236

Related WPI Acc No: 94-048787; 95-224326

XRAM Acc No: C92-133864

DNA sequence encoding a fusion protein - comprises % % %thioredoxin% % % and a heterologous protein sequence; used to produce stable soluble proteins e.g. IL-11

Patent Assignee: GENETICS INST INC (GEMY )

Inventor: LAVALLIE E R; MCCOY J

Number of Countries: 019 Number of Patents: 007

Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Main IPC | Week     |
|------------|------|----------|-------------|------|----------|----------|----------|
| WO 9213955 | A1   | 19920820 | WO 92US944  | A    | 19920206 | B        | 199236 B |
| AU 9214671 | A    | 19920907 | AU 9214671  | A    | 19920206 | B        | 199249   |
|            |      |          | WO 92US944  | A    | 19920206 |          |          |
| JP 5507209 | W    | 19931021 | JP 92507259 | A    | 19920206 | B        | 199347   |

-more-

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Display 15/3/14 (Item 2 from file: 351)  
 DIALOG(R)File 351:DERWENT WPI  
 (c)1998 Derwent Info Ltd. All rts. reserv.  
 WO 92US944 A 19920206  
 US 5270181 A 19931214 US 91652531 A 19910206 B 199350  
 US 91745382 A 19910814  
 EP 574506 A1 19931222 EP 92907803 A 19920206 B 199351  
 WO 92US944 A 19920206  
 AU 663489 B 19951012 AU 9214671 A 19920206 B 199548  
 JP 2513978 B2 19960710 JP 92507259 A 19920206 B 199632  
 WO 92US944 A 19920206

Priority Applications (No Type Date): US 91745382 A 19910814; US 91652531 A 19910206

Filing Details:

Patent Kind Filing Notes Application Patent

WO 9213955 A1

Designated States (National): AU CA JP

Designated States (Regional): AT BE CH DE DK ES FR GB GR IT LU MC NL SE  
 AU 9214671 A Based on WO 9213955

-more-

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Display 15/3/14 (Item 2 from file: 351)  
 DIALOG(R)File 351:DERWENT WPI  
 (c)1998 Derwent Info Ltd. All rts. reserv.  
 JP 5507209 W Based on WO 9213955  
 US 5270181 A CIP of US 91652531  
 EP 574506 A1 Based on WO 9213955  
 Designated States (Regional): AT BE CH DE DK ES FR GB GR IT LI LU MC NL SE  
 AU 663489 B Previous Publ. AU 9214671  
 Based on WO 9213955  
 JP 2513978 B2 Previous Publ. JP 5507209  
 Based on WO 9213955  
 Language, Pages: WO 9213955 (E, 53); JP 5507209 (15); US 5270181 (35); EP 574506 (E); JP 2513978 (24)

- end of record -

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Display 15/3/15 (Item 1 from file: 399)  
 DIALOG(R)File 399:CA SEARCH(R)  
 (c) 1998 American Chemical Society. All rts. reserv.

127134569 CA: 127(10)134569s JOURNAL  
 Expression of properly folded human glutamate decarboxylase 65 as a fusion protein in Escherichia coli  
 AUTHOR(S): Papouchado, Mariana L.; Valdez, Silvina N.; Ghiringhelli, Daniel; Poskus, Edgardo; Ermacora, Mario R.  
 LOCATION: Catedra Immunologia, Facultad Farmacia Bioquimica, Universidad Buenos Aires, Buenos Aires, Argent.  
 JOURNAL: Eur. J. Biochem. DATE: 1997 VOLUME: 246 NUMBER: 2 PAGES: 350-359 CODEN: EJBCAI ISSN: 0014-2956 LANGUAGE: English PUBLISHER: Springer

- end of record -

?

Display 15/3/16 (Item 2 from file: 399)  
 DIALOG(R)File 399:CA SEARCH(R)  
 (c) 1998 American Chemical Society. All rts. reserv.

113037504 CA: 113(5)37504v JOURNAL  
 Purification and characterization of plasmid-encoded thioredoxin from E.

coli LE392 transformants

AUTHOR(S): Cho, Man Ho; Hahn, Tae Ryong

LOCATION: Dep. Genet., Kyung Hee Univ., Suwon, 449-900, S. Korea

JOURNAL: Han'guk Saenghwa Hakhoechi DATE: 1990 VOLUME: 23 NUMBER: 1

PAGES: 5-10 CODEN: KBCJAK ISSN: 0368-4881 LANGUAGE: English

- end of record -

?

Display 15/3/17 (Item 3 from file: 399)

DIALOG(R)File 399:CA SEARCH(R)

(c) 1998 American Chemical Society. All rts. reserv.

110187234 CA: 110(21)187234j JOURNAL

Incorporation of foreign gene with Ti (tumor-inducing) plasmid vector system. (II). Expression of E. coli thioredoxin gene in cultured tobacco cells

AUTHOR(S): Lee, Hee Bong; Joo, Chung No; Hong, Soon Joo; Kim, Seong Wan; Lim, Chang Jin; Kim, Young Myeong

LOCATION: Coll. Natl. Sci., Kangweon Natl. Univ., Chuncheon, 200-701, S. Korea

JOURNAL: Han'guk Saenghwa Hakhoechi DATE: 1988 VOLUME: 21 NUMBER: 4

PAGES: 384-8 CODEN: KBCJAK ISSN: 0368-4881 LANGUAGE: English

- end of record -

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Display 15/3/18 (Item 4 from file: 399)

DIALOG(R)File 399:CA SEARCH(R)

(c) 1998 American Chemical Society. All rts. reserv.

110187233 CA: 110(21)187233h JOURNAL

Incorporation of foreign gene with Ti (tumor-inducing) plasmid vector system. (I). Introduction of E. coli thioredoxin gene into A. tumefaciens

AUTHOR(S): Lee, Hee Bong; Joo, Chung No; Hong, Soon Joo; Kim, Seong Wan; Lim, Chang Jin; Kim, Young Myeong

LOCATION: Coll. Nat. Sci., Kangweon Natl. Univ., Chuncheon, 200-701, S. Korea

JOURNAL: Han'guk Saenghwa Hakhoechi DATE: 1988 VOLUME: 21 NUMBER: 4

PAGES: 378-83 CODEN: KBCJAK ISSN: 0368-4881 LANGUAGE: English

- end of record -

?

Display 15/3/19 (Item 1 from file: 50)

DIALOG(R)File 50:CAB Abstracts

(c) 1998 CAB International. All rts. reserv.

03192605 CAB Accession Number: 961602905

High level expression in Escherichia %%%coli%%%, purification and properties of chloroplast fructose-1,6-bisphosphatase from rapeseed (Brassica napus) leaves.

Rodriguez-Suarez, R. J.; Wolosiuk, R. A.

Instituto de Investigaciones Bioquimicas (Fundacion Campomar, IIBA-CONICET, FCEN-UBA), Antonio Machado 151, (1405) Buenos Aires, Argentina.

Photosynthesis Research vol. 46 (1/2): p.313-322

Publication Year: 1995

ISSN: 0166-8595

Language: English

Document Type: Journal article

- end of display -

? ds

| Set | Items | Description  |
|-----|-------|--------------|
| S1  | 1407  | AU="ISHII S" |

S2 255 AU="ISHII, S" OR AU="ISHII, S."  
 S3 137 AU="ISHII, SHUKICHI" OR AU="ISHII, SHUNSUKE" OR AU="ISHII,  
 SHUNSUKE, ISHII"  
 S4 73 AU="ISHII S I" OR AU="ISHII S-I"  
 S5 3 AU="ISHII, S. I." OR AU="ISHII, S.-I."  
 S6 1874 S1:S5  
 S7 4055 THIOREDOXIN  
 S8 5 S6 AND S7  
 S9 348118 COLI  
 S10 1439 S7 AND S9  
 S11 126226 PLASMID  
 S12 81 S10 AND S11  
 S13 546294 TRANSFORM?  
 S14 27 S12 AND S13  
 S15 19 RD (unique items)  
 ? bye

13apr98 07:04:16 User214369 Session D314.3

\$3.78 0.063 Hrs File55

\$15.95 11 Type(s) in Format 3

\$1.45 1 Type(s) in Format 7

\$17.40 12 Types

\$21.18 Estimated cost File55

\$0.42 0.014 Hrs File154

\$0.20 1 Type(s) in Format 3

\$0.20 1 Type(s) in Format 7

\$0.40 2 Types

\$0.82 Estimated cost File154

\$7.04 0.032 Hrs File351

\$2.70 1 Type(s) in Format 2

\$6.70 2 Type(s) in Format 3

\$9.40 3 Types

\$16.44 Estimated cost File351

\$4.56 0.038 Hrs File399

\$9.00 4 Type(s) in Format 3

\$4.50 2 Type(s) in Format 7

\$13.50 6 Types

\$18.06 Estimated cost File399

\$0.51 0.017 Hrs File50

\$1.40 1 Type(s) in Format 3

\$1.40 1 Types

\$1.91 Estimated cost File50

OneSearch, 5 files, 0.166 Hrs FileOS

\$58.41 Estimated cost this search

\$58.41 Estimated total session cost 0.181 Hrs.

Logoff: level 98.03.26 D 07:04:16

\$%`Dialog;HighlightOn=%%%;HighlightOff=%%%;  
Trying 9158046...Open

box200> enter system id

Logging in to Dialog

# DIALOG INFORMATION SERVICES

PLEASE LOGON:

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IALOG Invalid account number

# DIALOG INFORMATION SERVICES

PLEASE LOGON:

\*\*\*\*\*

ENTER PASSWORD:

a80093fe

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Welcome to DIALOG

Dialog level 97.10.03D

Last logoff: 27oct97 08:17:47

Logon file405 29oct97 13:23:51

ANNOUNCEMENT \*\*\*\* ANNOUNCEMENT \*\*\*\* ANNOUNCEMENT

\*\*\*New: PIER'S Exports (Mexico) (File 572)

\*\*\*New: PIER'S Imports (Mexico) (File 574)

\*\*\*New: Yellow Books Leadership Directories (Files 81, 82 and 235)

\*\*\*New: TV and Radio Transcripts (File 648)

\*\*\*New: Fuji-Keizai Market Research (File 508)

\*\*\*New: World Reporter (File 20)

\*\*\*New: Thomson/Polk Banking Database (File 324)

\*\*\*

Reloaded: Textile Technology Digest (File 119)

\*\*\*Reloaded: Aquatic Sciences and Fisheries Abstracts (ASFA) (File 44)

\*\*\*Reloaded and Enhanced: Ulrich's Int'l Per. Dir. (File 480)

\*\*\*

\*\*\*Removed: Buyer's Guide to Micro Software (SOFT)(File 237)

\*\*\*

\*\*\*New KR OnDisc(TM): UK Business Elite on CD-ROM

\*\*\*New KR OnDisc(TM): Business & Industry (Archive Disk) on CD-ROM

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>>> of new databases, price changes, etc. <<<

>>> Announcements last updated 15Oct97 <<<

SYSTEM:HOME

Menu System II: D2 version 1.7.8 term=ASCII

\*\*\* DIALOG HOMEBASE(SM) Main Menu \*\*\*

Information:

1. Announcements (new files, free connect time, price changes, etc.)
2. Database, Rates, & Command Descriptions

3. Help in Choosing Databases for Your Topic
4. Customer Services (telephone assistance, training, seminars, etc.)
5. Product Descriptions

Connections:

6. DIALOG Menus(SM)
7. DIALOG Business Connection(R) and DIALOG Headlines(SM)
8. DIALOG(R) Document Delivery
9. Data Star(R)
10. Other Online Menu Services & Files (MoneyCenter(R), OAG, TNT, etc.)

(c) 1997 Knight-Ridder Information, Inc.

/H = Help          /L = Logoff          /NOMENU = Command Mode

Enter an option number to view information or to connect to an online service. Enter a BEGIN command plus a file number to search a database (e.g., B1 for ERIC).

? b 410

29oct97 13:24:01 User214369 Session D289.1

\$0.00 0.002 Hrs FileHomeBase

\$0.00 Estimated cost FileHomeBase

\$0.00 Estimated cost this search

\$0.00 Estimated total session cost 0.002 Hrs.

File 410:Chronolog(R) 1981-1997/Oct

(c) 1997 Knight-Ridder Info

Set Items Description

? set hi % % %;set hi % % %

HIGHLIGHT set on as ' % % % ' % % %

% % % HIGHLIGHT set on as ' % % % '

? b 582

29oct97 13:24:13 User214369 Session D289.2

\$0.00 0.003 Hrs File410

\$0.00 Estimated cost File410

\$0.00 Estimated cost this search

\$0.00 Estimated total session cost 0.006 Hrs.

File 582:Augusta Chronicle 1996- 1997/Oct 28

(c) 1997 Augusta Chronicle

Set Items Description

? b 351

29oct97 13:24:54 User214369 Session D289.3

\$0.50 0.011 Hrs File582

\$0.50 Estimated cost File582

\$0.50 Estimated cost this search

\$0.50 Estimated total session cost 0.017 Hrs.

File 351:DERWENT WPI 1963-1997/UD=9742;UP=9739;UM=9737

(c)1997 Derwent Info Ltd

\*File 351: See HELP NEWS FAQ 351 for reload information.

British applications now updated faster-See HELP NEWS 351

Set Items Description

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S1 3491593 AC=JP (Japan)

? s an=291859

S2 0 AN=291859

? s an=7-291859

S3 0 AN=7-291859

? s an=7 291859

S4 0 AN=7 291859

? s an=7291859

S5 0 AN=7291859

? s ad=951013

S6 2940 AD=951013

? s s1 and s6

3491593 S1

2940 S6

S7 1978 S1 AND S6

? s thioredoxin

S8 44 THIOREDOXIN

? s s8 and s7

44 S8

1978 S7

S9 1 S8 AND S7

? d s9/7/1

Display 9/7/1

DIALOG(R)File 351:DERWENT WPI

(c)1997 Derwent Info Ltd. All rts. reserv.

011236915 \*\*Image available\*\*

WPI Acc No: 97-214818/199720

Bacterium producing eukaryotic proteins in soluble form - by expression  
of protein-encoding and % % %thioredoxin % % % genes

Patent Assignee: HSP RES INST INC (HSPR-N); INST PHYSICAL & CHEM RES (RIKA  
); HSP KENKYUSHO KK (HSPK-N); RIKAGAKU KENKYUSHO (RIKA )

Inventor: ISHII S; YURA T

Number of Countries: 008 Number of Patents: 003

Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Main IPC | Week     |
|------------|------|----------|-------------|------|----------|----------|----------|
| EP 768382  | A2   | 19970416 | EP 96116359 | A    | 19961011 |          | 199720 B |
| JP 9107954 | A    | 19970428 | JP 95291859 | A    | 19951013 |          | 199727 B |
| CA 2187250 | A    | 19970414 | CA 2187250  | A    | 19961007 |          | 199733   |

Priority Applications (No Type Date): JP 95291859 A 19951013

Cited Patents: No search report pub.

-more-

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Display 9/7/1

DIALOG(R)File 351:DERWENT WPI

(c)1997 Derwent Info Ltd. All rts. reserv.



## Patent Details:

Patent Kind Lan Pg Filing Notes Application Patent

EP 768382 A2 E 15

Designated States (Regional): CH DE FR GB IT LI

JP 9107954 A 13

## Abstract (Basic): EP 768382 A

Bacterium either co-transformed with both an expression vector for a % % %thioredoxin% % % gene and an expression vector for a desired gene, or transformed with a vector for a % % %thioredoxin% % % gene and a desired gene, the 2 genes being expressed as 2 separate proteins, is new. Also claimed is a method for producing a soluble protein, which comprises cultivating a bacterium as above and recovering the protein in soluble form.

USE - The bacterium can be used for the prodn. of proteins in soluble form, esp. interferons, interleukins, interleukin receptors, interleukin receptor antagonists, granulocyte colony-stimulating factor

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Display 9/7/1

DIALOG(R)File 351:DERWENT WPI

(c)1997 Derwent Info Ltd. All rts. reserv.

(CSF), granulocyte macrophage CSF, macrophage CSF, erythropoietin, thrombopoietin, leukaemia inhibitory factor, stem cell factor, tumour necrosis factor, growth hormones, proinsulin, insulin-like growth factors (GFs), fibroblast GF, platelet-derived GF, transforming GFs, hepatocyte GF, bone morphogenetic proteins, nerve GF, ciliary neurotrophic factor (NF), brain-derived NF, glial cell line-derived NF, neurotrophin-3, urokinase, tissue plasminogen activator, blood coagulation factors, protein C, gluco-cerebrosidase, SOD, renin, lysozyme, P450, prochymosin, trypsin inhibitor, elastase inhibitor, lipocortin, immunoglobulins, single-chain antibody fragments, complement components, serum albumin, virus-constituting proteins, proto-oncogene prods. and transcription factors (claimed).

ADVANTAGE - Eukaryotic proteins that are normally expressed in insol. form can be expressed in soluble form, with the native conformation, by co-expression with % % %thioredoxin% % %.

Dwg.2/5

Derwent Class: B04; D16

-more-

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Display 9/7/1

DIALOG(R)File 351:DERWENT WPI

(c)1997 Derwent Info Ltd. All rts. reserv.

International Patent Class (Main): C12N-001/21; C12N-015/53

International Patent Class (Additional): C07H-021/04; C07K-014/82;

C12N-015/09; C12N-015/11; C12N-015/70; C12P-021/02; C12N-001/21;

C12R-001-19

- end of display -

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| Set | Items   | Description   |
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| S1  | 3491593 | AC=JP (Japan) |
| S2  | 0       | AN=291859     |
| S3  | 0       | AN=7-291859   |
| S4  | 0       | AN=7 291859   |

S5 0 AN=7291859  
 S6 2940 AD=951013  
 S7 1978 S1 AND S6  
 S8 44 THIOREDOXIN  
 S9 1 S8 AND S7  
 ? s s coli or bacteri?

0 S COLI  
 55435 BACTERI?  
 S10 55435 S COLI OR BACTERI?  
 ? s s8 and s10

44 S8  
 55435 S10  
 S11 11 S8 AND S10  
 ? d s11/7/1-11

Display 11/7/1  
 DIALOG(R)File 351:DERWENT WPI  
 (c)1997 Derwent Info Ltd. All rts. reserv.

011356998

WPI Acc No: 97-334905/199731

Fused DNA encoding heat-resistant protein and protein of interest -  
 simplifies purification and increases quantity of desired protein, also  
 useful as antigen without giving non-specific reaction

Patent Assignee: FUJI REBIO INC (FJRE )

Inventor: FUJII N; OKADA M; UENO E

Number of Countries: 019 Number of Patents: 002

Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Main IPC | Week     |
|------------|------|----------|-------------|------|----------|----------|----------|
| EP 781848  | A2   | 19970702 | EP 96120899 | A    | 19961227 |          | 199731 B |
| AU 9676499 | A    | 19970703 | AU 9676499  | A    | 19961224 |          | 199735   |

Priority Applications (No Type Date): JP 95352225 A 19951228

Patent Details:

| Patent | Kind | Lan | Pg | Filing Notes | Application | Patent |
|--------|------|-----|----|--------------|-------------|--------|
|        |      |     |    |              |             |        |

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Display 11/7/1  
 DIALOG(R)File 351:DERWENT WPI  
 (c)1997 Derwent Info Ltd. All rts. reserv.  
 EP 781848 A2 E 44  
 Designated States (Regional): AT BE CH DE DK ES FI FR GB GR IE IT LI LU  
 MC NL PT SE

Abstract (Basic): EP 781848 A

A new fused DNA sequence (I), comprises a DNA sequence of a heat-resistant protein fused directly or indirectly to a DNA sequence encoding a selected protein or peptide. Also claimed is a fused protein (A) expressed from (I).

USE - The invention is particularly useful when, using its conventional DNA, a necessary expression amount of a selected desired protein or peptide is difficult to be purified. (A) can also be used as an antigen in an immunoreaction.

ADVANTAGE - (A) is highly soluble and heat resistant, thus enabling the easy removal of unnecessary substances by heat treatment during its purification, resulting in protein levels that can be several hundred times higher than other methods. The heat resistant protein used in (A)

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Display 11/7/1  
 DIALOG(R)File 351:DERWENT WPI  
 (c)1997 Derwent Info Ltd. All rts. reserv.  
 is derived from a thermophilic % % %bacterium% % % which cannot live in  
 living bodies of mammals, hence the fused protein can be used as an  
 antigen without resulting in a non-specific reaction, such as occur  
 with the widely used glutathione-S-transferase and % % %thioredoxin% % %  
 proteins derived from Escherichia coli and Schistosoma japonicum.

Dwg.0/12

Derwent Class: B04; D16  
 International Patent Class (Main): C12N-015/62  
 International Patent Class (Additional): C07K-014/15; C07K-014/195;  
 C07K-014/20; C07K-019/00; C12N-009/12; C12N-015/31; C12N-015/48;  
 C12N-015/54

- end of record -

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Display 11/7/2  
 DIALOG(R)File 351:DERWENT WPI  
 (c)1997 Derwent Info Ltd. All rts. reserv.  
 011236915 \*\*Image available\*\*  
 WPI Acc No: 97-214818/199720  
 % % %Bacterium% % % producing eukaryotic proteins in soluble form - by  
 expression of protein-encoding and % % %thioredoxin% % % genes  
 Patent Assignee: HSP RES INST INC (HSPR-N); INST PHYSICAL & CHEM RES (RIKA  
 ); HSP KENKYUSHO KK (HSPK-N); RIKAGAKU KENKYUSHO (RIKA )  
 Inventor: ISHII S; YURA T  
 Number of Countries: 008 Number of Patents: 003  
 Patent Family:  

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Main IPC | Week     |
|------------|------|----------|-------------|------|----------|----------|----------|
| EP 768382  | A2   | 19970416 | EP 96116359 | A    | 19961011 |          | 199720 B |
| JP 9107954 | A    | 19970428 | JP 95291859 | A    | 19951013 |          | 199727   |
| CA 2187250 | A    | 19970414 | CA 2187250  | A    | 19961007 |          | 199733   |

Priority Applications (No Type Date): JP 95291859 A 19951013  
 Cited Patents: No search report pub.

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Display 11/7/2  
 DIALOG(R)File 351:DERWENT WPI  
 (c)1997 Derwent Info Ltd. All rts. reserv.  
 Patent Details:  

| Patent    | Kind | Lan | Pg | Filing | Notes | Application | Patent |
|-----------|------|-----|----|--------|-------|-------------|--------|
| EP 768382 | A2   | E   | 15 |        |       |             |        |

 Designated States (Regional): CH DE FR GB IT LI  
 JP 9107954 A 13

Abstract (Basic): EP 768382 A

% % %Bacterium% % % either co-transformed with both an expression  
 vector for a % % %thioredoxin% % % gene and an expression vector for a  
 desired gene, or transformed with a vector for a % % %thioredoxin% % % gene  
 and a desired gene, the 2 genes being expressed as 2 separate proteins,  
 is new. Also claimed is a method for producing a soluble protein, which  
 comprises cultivating a % % %bacterium% % % as above and recovering the  
 protein in soluble form.

USE - The %%%bacterium%%% can be used for the prodn. of proteins in soluble form, esp. interferons, interleukins, interleukin receptors, interleukin receptor antagonists, granulocyte colony-stimulating factor

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Display 11/7/2  
 DIALOG(R)File 351:DERWENT WPI  
 (c)1997 Derwent Info Ltd. All rts. reserv.  
 (CSF), granulocyte macrophage CSF, macrophage CSF, erythropoietin, thrombopoietin, leukaemia inhibitory factor, stem cell factor, tumour necrosis factor, growth hormones, proinsulin, insulin-like growth factors (GFs), fibroblast GF, platelet-derived GF, transforming GFs, hepatocyte GF, bone morphogenetic proteins, nerve GF, ciliary neurotrophic factor (NF), brain-derived NF, glial cell line-derived NF, neurotrophin-3, urokinase, tissue plasminogen activator, blood coagulation factors, protein C, gluco-cerebrosidase, SOD, renin, lysozyme, P450, prochymosin, trypsin inhibitor, elastase inhibitor, lipocortin, immunoglobulins, single-chain antibody fragments, complement components, serum albumin, virus-constituting proteins, proto-oncogene prods. and transcription factors (claimed).  
 ADVANTAGE - Eukaryotic proteins that are normally expressed in insol. form can be expressed in soluble form, with the native conformation, by co-expression with %%%thioredoxin%%%

Dwg.2/5

Derwent Class: B04; D16

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Display 11/7/2  
 DIALOG(R)File 351:DERWENT WPI  
 (c)1997 Derwent Info Ltd. All rts. reserv.  
 International Patent Class (Main): C12N-001/21; C12N-015/53  
 International Patent Class (Additional): C07H-021/04; C07K-014/82;  
 C12N-015/09; C12N-015/11; C12N-015/70; C12P-021/02; C12N-001/21;  
 C12R-001-19

- end of record -

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Display 11/7/3  
 DIALOG(R)File 351:DERWENT WPI  
 (c)1997 Derwent Info Ltd. All rts. reserv.  
 010491472  
 WPI Acc No: 95-392873/199550  
 Inhibiting or preventing microbial growth with victorin - useful for treating %%%bacterial%%%, protozoal or fungal infections in humans, animals or plants  
 Patent Assignee: UNIV AUSTRALIAN NAT (AUSU )  
 Inventor: CHEN H; LOSCHKE D C; ROLFE B G  
 Number of Countries: 019 Number of Patents: 002  
 Patent Family:  

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Main IPC    | Week     |
|------------|------|----------|-------------|------|----------|-------------|----------|
| WO 9529592 | A1   | 19951109 | WO 95AU254  | A    | 19950427 | A01N-063/04 | 199550 B |
| AU 9523406 | A    | 19951129 | AU 9523406  | A    | 19950427 | A01N-063/04 | 199609   |

 Priority Applications (No Type Date): AU 945338 A 19940429  
 Cited Patents: AU 9345474  
 Patent Details:

-more-

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Display 11/7/3  
 DIALOG(R)File 351:DERWENT WPI  
 (c)1997 Derwent Info Ltd. All rts. reserv.  
 Patent Kind Lan Pg Filing Notes Application Patent  
 WO 9529592 A1 E 20  
 Designated States (National): AU JP US  
 Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LU MC NL  
 PT SE  
 AU 9523406 A Based on WO 9529592

Abstract (Basic): WO 9529592 A

Inhibiting or preventing the growth of % % %bacteria% % %, protozoa and/or fungi involves contacting the organisms with a toxic or growth-inhibiting amt. of a cpd. (I) selected from the toxin victorin and its derivs. and analogues.

Also claimed are:(a) use of the method above for prophylactic or therapeutic treatment of a pathogenic % % %bacterial% % %, protozoal and/or fungal infections in a human, animal or plant, and(b) the use of (I) and (I)-contg. compsns. as above, as an active component in a suitable carrier medium.

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 DIALOG(R)File 351:DERWENT WPI  
 (c)1997 Derwent Info Ltd. All rts. reserv.  
 USE - (I) are highly toxic to all tested % % %bacteria% % %, e.g. E.coli C600 and Agrobacterium tumefaciens C58, Erwinia carotovora, Pseudomonas andropogonis and Xanthomonas campestris and the human pathogenic % % %bacteria% % % Enterobacter aerogenes, Enterococcus casseliflavus, Mycobacterium leprae, Pseudomonas aeruginosa, Rhodococcus equi, Serratia marcescens, Shigella flexneri, Staphylococcus aureus, Streptococcus and Xanthomonas maltophilia. (I) are also toxic to some protozoa (e.g. Giardia duodenalis and the malarial parasite Plasmodium vinckei) and some fungi (e.g. Saccharomyces cerevisiae and the human pathogens Candida albicans and Cryptococcus neoformans).  
 ADVANTAGE - The mechanism of action of (I) (probably inhibition of % % %thioredoxin% % % activity) is different from that of conventional antibiotics, so (I) are potentially active against resistant microbial strains.  
 Dwg.0/0  
 Derwent Class: B04; D16

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 DIALOG(R)File 351:DERWENT WPI  
 (c)1997 Derwent Info Ltd. All rts. reserv.  
 International Patent Class (Main): A01N-063/04  
 International Patent Class (Additional): A01N-065/00; A61K-035/70;  
 A61K-035/84; A61K-038/08

- end of record -

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WO 9213955 A1 19920820 WO 92US944 A 19920206 B 199236 B  
 AU 9214671 A 19920907 AU 9214671 A 19920206 B 199249  
     WO 92US944 A 19920206  
 JP 5507209 W 19931021 JP 92507259 A 19920206 B 199347  
     WO 92US944 A 19920206  
 US 5270181 A 19931214 US 91652531 A 19910206 B 199350

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DIALOG(R)File 351:DERWENT WPI  
 (c)1997 Derwent Info Ltd. All rts. reserv.

008389890

WPI Acc No: 90-276891/199037

Modified T7-type DNA polymerase - obtd. by purifying T7 DNA polymerase so  
 as to reduce associated exo-nuclease activity

Patent Assignee: HARVARD COLLEGE (HARD )

Inventor: RICHARDSON C C; TABOR S

Number of Countries: 013 Number of Patents: 004

Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Main IPC    | Week     |
|------------|------|----------|-------------|------|----------|-------------|----------|
| EP 386858  | A    | 19900912 | EP 90201139 | A    | 19871224 |             | 199037 B |
| EP 386858  | B1   | 19940413 | EP 87311435 | A    | 19871224 | C12N-009/12 | 199415   |
|            |      |          | EP 90201139 | A    | 19871224 |             |          |
| DE 3789623 | G    | 19940519 | DE 3789623  | A    | 19871224 | C12N-009/12 | 199421   |
|            |      |          | EP 90201139 | A    | 19871224 |             |          |
| ES 2063243 | T3   | 19950101 | EP 90201139 | A    | 19871224 | C12N-009/12 | 199508   |

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Display 11/7/8

DIALOG(R)File 351:DERWENT WPI  
 (c)1997 Derwent Info Ltd. All rts. reserv.

008122994

WPI Acc No: 90-009995/199002

New reducible quinone(s) - include substituents which promote varying amounts  
 of leuco dye release at physiological pH, for e.g. detecting urinary  
 tract infection

Patent Assignee: EASTMAN KODAK CO (EAST )

Inventor: MOOBERRY J B

Number of Countries: 007 Number of Patents: 003

Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Main IPC | Week     |
|------------|------|----------|-------------|------|----------|----------|----------|
| EP 350254  | A    | 19900110 | EP 89306769 | A    | 19890704 |          | 199002 B |
| JP 2070761 | A    | 19900309 | JP 89171311 | A    | 19890704 |          | 199016   |
| US 5108903 | A    | 19920428 | US 88215140 | A    | 19880705 |          | 199220   |

Priority Applications (No Type Date): US 88215140 A 19880705

Cited Patents: 1. journal ref.; A3...9051; EP 131511; EP 211898; No search

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DIALOG(R)File 351:DERWENT WPI  
 (c)1997 Derwent Info Ltd. All rts. reserv.

008122993 \*\*Image available\*\*

WPI Acc No: 90-009994/199002

New reducible cpds., e.g. for detecting urinary tract infections - are  
quinone(s) with substituents which promote varying amts. of aniline dye  
release at physiological pH

Patent Assignee: EASTMAN KODAK CO (EAST )

Inventor: MOOBERRY J B

Number of Countries: 007 Number of Patents: 004

Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Main IPC    | Week     |
|------------|------|----------|-------------|------|----------|-------------|----------|
| EP 350253  | A    | 19900110 | EP 89306767 | A    | 19890704 |             | 199002 B |
| JP 2067370 | A    | 19900307 | JP 89171310 | A    | 19890704 |             | 199016   |
| US 5108902 | A    | 19920428 | US 88215127 | A    | 19880705 |             | 199220   |
| US 5196519 | A    | 19930323 | US 88215127 | A    | 19880705 | C07C-245/06 | 199314   |
|            |      |          | US 91819162 | A    | 19911204 |             |          |

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DIALOG(R)File 351:DERWENT WPI

(c)1997 Derwent Info Ltd. All rts. reserv.

007480469

WPI Acc No: 88-114403/198817

Modified T7-type DNA polymerase(s) produced from cloned fragments -  
useful esp. for DNA nucleotide base sequencing

Patent Assignee: HARVARD COLLEGE (HARD )

Inventor: RICHARDSON C C; TABOR S

Number of Countries: 035 Number of Patents: 044

Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Main IPC | Week     |
|------------|------|----------|-------------|------|----------|----------|----------|
| EP 265293  | A    | 19880427 | EP 87311435 | A    | 19871224 |          | 198817 B |
| WO 8805470 | A    | 19880728 | WO 87US3331 | A    | 19871215 |          | 198831   |
| AU 8810224 | A    | 19880721 |             |      |          |          | 198836   |
| NO 8800126 | A    | 19880808 |             |      |          |          | 198837   |
| ZA 8800045 | A    | 19880624 | ZA 8845     | A    | 19880105 |          | 198841   |
| FI 8800131 | A    | 19880715 |             |      |          |          | 198842   |
| HU 46069   | T    | 19880928 |             |      |          |          | 198843   |

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DIALOG(R)File 351:DERWENT WPI

(c)1997 Derwent Info Ltd. All rts. reserv.

004642335

WPI Acc No: 86-145678/198623

Compsn. for waving, straightening, removing or softening hair - contg.  
thioglycolic acid cpd. and % % %thioredoxin % % % cpd

Patent Assignee: REPLIGEN CORP (REPK )

Inventor: PIGIET V P

Number of Countries: 012 Number of Patents: 006

Patent Family:

| Patent No   | Kind | Date     | Applicat No | Kind | Date     | Main IPC | Week     |
|-------------|------|----------|-------------|------|----------|----------|----------|
| EP 183506   | A    | 19860604 | EP 85308540 | A    | 19851125 |          | 198623 B |
| JP 61137899 | A    | 19860625 | JP 85256839 | A    | 19851118 |          | 198632   |
| US 4738841  | A    | 19880419 | US 86899707 | A    | 19860825 |          | 198818   |
| CA 1266830  | A    | 19900320 |             |      |          |          | 199016   |
| US 4919924  | A    | 19900424 | US 85770498 | A    | 19850828 |          | 199021   |
| US 4941885  | A    | 19900717 | US 89407687 | A    | 19890914 |          | 199032 N |



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| Set | Items   | Description        |
|-----|---------|--------------------|
| S1  | 3491593 | AC=JP (Japan)      |
| S2  | 0       | AN=291859          |
| S3  | 0       | AN=7-291859        |
| S4  | 0       | AN=7 291859        |
| S5  | 0       | AN=7291859         |
| S6  | 2940    | AD=951013          |
| S7  | 1978    | S1 AND S6          |
| S8  | 44      | THIOREDOXIN        |
| S9  | 1       | S8 AND S7          |
| S10 | 55435   | S COLI OR BACTERI? |
| S11 | 11      | S8 AND S10         |

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